



OVERVIEW

MAY 2017

Outline

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Purpose and Mission

Purpose

- Support the common interests of members, implementers and operators for the development, commercialization, and adoption of LTE solutions for the US 3.5 GHz Citizens Broadband Radio Service (CBRS)

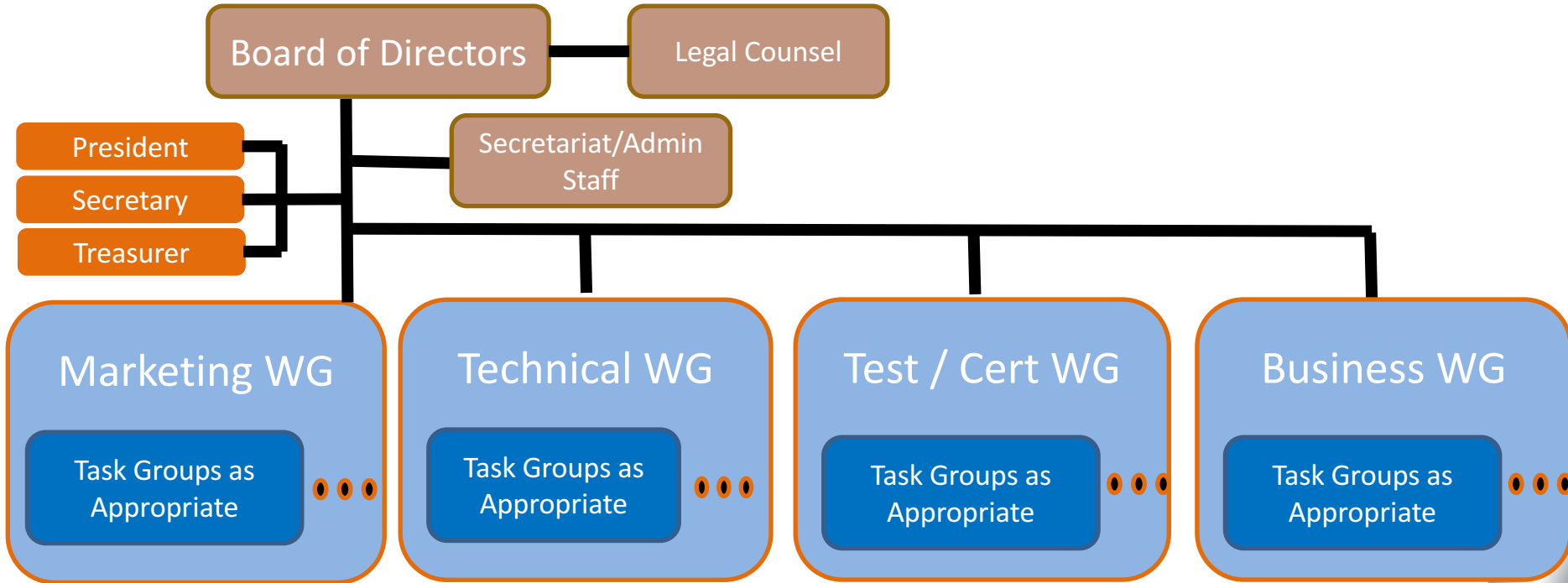
Mission

- Evangelize LTE-based CBRS technology, use cases, and business opportunities
- Drive technology developments necessary to fulfill the mission, including multi-operator LTE capabilities
- Identify required advocacy steps (e.g., marketing, promotion, certification, branding, regulatory, etc.) and catalyze action in these areas
- Establish an effective product certification program for LTE equipment in the US 3.5 GHz band ensuring multi-vendor interoperability



Organization

Basic Organizational Structure



Alliance Membership

SPONSOR MEMBERS

Alphabet



ERICSSON



RUCKUS™
Simply Better Wireless.

QUALCOMM™



federated wireless™

FULL MEMBERS



COMMSCOPE™



HUAWEI



SAMSUNG



ADOPTER MEMBERS



NetComm Wireless



Board of Directors

Federated Wireless:

- Sarosh Vesuna
SVP, Corporate Development and Strategic Alliances

Alphabet:

- Dr. Preston Marshall (Vice-chair)
Principal Wireless Architect

Intel:

- Shawn Covell
VP, Platform Engineering Group,
Director of Technology Advocacy
and Spectrum Strategy

Nokia:

- Chris Stark
Head of NA Business Development

Qualcomm:

- Neville Meijers (Chair)
VP, Business Development

Ruckus Wireless:

- Steve Martin
CTO

Ericsson:

- Glenn Laxdal
CTO & Head of Strategy, North America

CTIA:

- Paul Anuszkiewicz
VP, Spectrum Planning

Officers

Chairman of the Board of Directors:

- Neville Meijers, Qualcomm

Vice-chair of the Board of Directors:

- Preston Marshall, Alphabet

President

- Michael Peeters, Nokia

Treasurer

- Sarosh Vesuna, Federated Wireless

Secretary

- Dave Wright, Ruckus Wireless



Working Groups

Technical Working Group

Scope and Charter:

- Address technical issues that are not, or cannot be addressed (effectively or in a timely manner), by existing bodies (WInn Forum, 3GPP, etc.)
- Don't reinvent the wheel!
- Build technical consensus among CBRS proponents

Outputs:

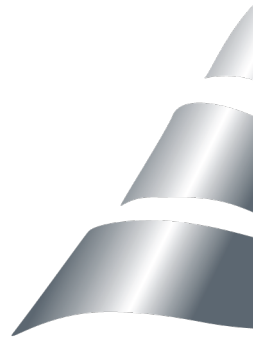
- Contributions into other fora where it makes sense, agreed and cosigned by many advocates
- White papers to document best practices, recommendations, guidelines, etc.
- Potential for certification guidelines (CBRS Alliance or other certification bodies TBD)

Task groups:

- Coexistence (Farhad Meshkati, Qualcomm)
- Radio (Iwo Angelow, Nokia)
- Network services (Masoud Olfat, Federated Wireless)

Chair: Al Jette, Nokia

Vice Chair(s): Doug Knisely, Qualcomm & Rao Yallapragada, Intel



Marketing Working Group

Scope and Charter:

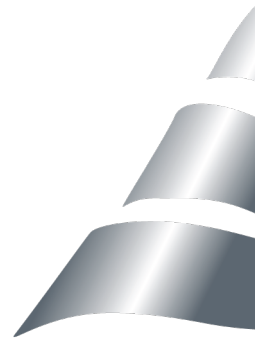
- Design, implementation, execution and management of overall Strategic Marketing program
- External facing Marketing Communications, Press Relations, Brand Strategies, Event planning
- Coordination point for Strategic Marketing Communications Agency
- Coordination point with Technical Working Group

Outputs:

- Web & social media presence
- Analyst & Media outreach
- Events presence
- White papers
- Webinars

Chair: Oren Binder, Ruckus Wireless

Vice Chair(s): Blake Tye, Intel



Testing/Certification Working Group

Scope and Charter:

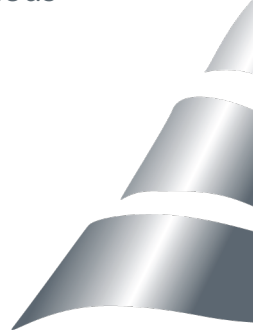
- Establish and oversee a test and certification program for 3.5 GHz Band LTE products and CBRS-specific network entities
- The test program will test according to Technical WG specifications, and other relevant requirements.
 - The focus is on test cases or conditions that are not addressed by existing certification programs (e.g., FCC, WINNF, 3GPP, etc.)
- A “CBRS Alliance” certified product will demonstrate it has met industry developed standards for interoperability, radio performance, radio coexistence, and end-to-end services.

Outputs:

- Documented CBRS Alliance Certification Process
- Technical Specification document(s) including relevant test cases, test criteria, and test methods
- Methods and program to select and certify independent Authorized Test Laboratories
- Ongoing oversight of the CBRS Alliance Certification Program
- Issuance of CBRS Alliance Certificates

Chair: Kurt Schaubach, Federated Wireless;

Vice Chair(s): Piyush Raj, American Tower & Luther Smith, Cable Labs



Business Working Group

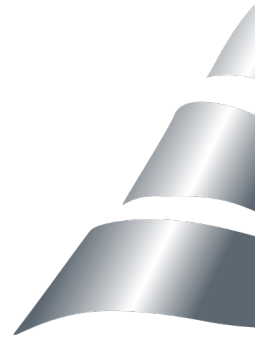
Scope and Charter:

- Address business issues related to deploying LTE equipment in the CBRS band.
- Foster the exchange of ideas necessary to define the business models for CBRS deployments.
- Identify common use cases and deployment models.
- Develop and encourage the use of standardized business models and agreements.

Outputs:

- White papers
- Models

Chair (Acting): Preston Marshall, Alphabet



Projected Timeline

- April 2015 : FCC official Report & Order rules for 3.5 GHz Band
- April 2016: FCC Releases final rules for CBRS
- July 2016 : The CBRS Alliance is established
- 2H 2016 : Initial CBRS trials
- **Q4 2017 : Release 1 – Infrastructure certified and ready for deployment**
- 2017+ : Continuous releases with additional advanced features

Relationship to Other Wireless Industry Associations

The purpose and work of the CBRS Alliance is complementary to, and often an extension of, the purpose and work of the Wireless Innovation Forum (WInnForum).

- **WInnForum:** WInnForum is defining and developing the requirements and technical specifications to enable the foundational CBRS framework (e.g. SAS-to-CBSD communication, ESC sensing, etc.). WInnForum's work products are intended to be agnostic of the specific radio access technology (e.g. LTE, WiMax, Wi-Fi, etc.). The CBRS Alliance is focusing on promoting, enabling and optimizing LTE-based technologies for operation in the CBRS band. It will leverage the work of the WInnForum (and other organizations) to accomplish its purpose and mission.
- **MulteFire:** MulteFire is an LTE-based technology for operating in solely unlicensed spectrum. MulteFire is envisioned to broaden the LTE ecosystem to new markets and new entities without licensed spectrum and to enhance consumer experience for local area Internet access including voice and video services. The MulteFire Alliance was established to support the common interests of members, developers and users in the application of Long Term Evolution (LTE) and next generation mobile cellular technology in configurations that use only unlicensed radio spectrum (including—but not exclusive to—the CBRS Band). The MulteFire Alliance and the CBRS Alliance have the common objective to promote, directly or indirectly, LTE-based technologies in the U.S. CBRS (3.55-3.7 GHz band).
- **WBA:** The Wireless Broadband Alliance (WBA) works to champion the development of a converged wireless broadband ecosystem. Through the seamless, secure and interoperable unlicensed wireless broadband services, the organization aims to enable outstanding user experience for more than two billion global subscribers through its member operators. The CBRS Alliance and WBA have a positive marketing relationship and have collaborated on events and other industry activities together.